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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/040,078	01/03/2002	Yao-Dong Ma		9418

7590 04/26/2004  
Yao-Dong Ma  
1866 Bethany Ave  
San Jose, CA 95132

EXAMINER

ALPHONSE, FRITZ

ART UNIT	PAPER NUMBER
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2675

DATE MAILED: 04/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/040,078

Applicant(s)

MA, YAO-DONG

Examiner

Fritz Alphonse

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2675

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-9 and 16-20 is/are rejected.
- 7) ☐ Claim(s) 10-15 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 16-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Particularly, claim 16 recites the limitation "a part of waveform" in line one of the claim. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu (U.S. Pat. No. 5,933,203) in view of Tsukamoto (U.S. Pat. No. 3,891,307).

As to claim 1, Wu teaches about driving means for a cholesteric liquid crystal display comprising: an erasing pulse (col. 3, lines 61-65) with its pulse configuration sufficiently activating display elements to an unstable planar state; an addressing pulse (col. 4, lines 10-15) with its pulse configuration sufficiently activating display elements to an unstable focal conic state; Wu (figure 12) teaches about the erasing pulse and the addressing pulse applied to a predetermined location in the same row and at the same time, whereby the unstable planar state and the unstable focal conic state are displayed simultaneously in at least a partial area of the

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display during the activating; whereby an stable planar state and an stable focal conic state are displayed simultaneously in at least a partial area of the display by the end of activating process (see figure 12; col. 4, lines 13-39).

Wu does not explicitly teach about a bias voltage pulse with its amplitude not less than a threshold voltage.

However, in the same field of endeavor, Tsukamoto (fig. 3) shoes a bias voltage pulse with its amplitude not less than a threshold voltage (see col. 3, lines 60 through col. 4 line 15).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to improve upon the display device, as disclosed by Tajima. Doing so would provide an improve electro-optical device using liquid crystal, in which the conventional defects as cross effect, slow response, flicker and low contrast can be solved.

As to claims 2-3, Wu (fig. 8) teaches about a driving means wherein the erasing pulse is a narrow pulse with amplitude higher than the cholesteric to nematic phase change voltage; and wherein the addressing pulse is a narrow pulse with amplitude approximately equal to unstable focal conic state (see figs. 9; col. 3, lines 45 through col. 4 line 6).

As to claims 4-5, Wu (figs. 12-14) teaches about a driving means wherein the bias voltage is a controllable voltage determining the unstable planar state; and wherein the unstable planar state is a displayable optical "on" state (col. 7, lines 41-55).

As to claims 6-7, Wu (figs. 12-14) teaches about a driving means wherein the unstable focal conic state is a displayable optical "off" state; and wherein the stable planar state is another displayable optical "on" state (col. 12, lines 21-39).

As to claims 8-9, Wu (figs. 12-14) teaches about a driving means wherein the stable focal conic state is another displayable optical "off" state; and wherein at least a partial area addressing means is a whole frame addressing means (col. 12, lines 21-39).

*Allowable Subject Matter*

5. Claims 10-15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

*Conclusion*

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kawakami et al. (U.S. Pat. No. 4,380,008) disclose a method of driving a matrix type phase transition LCD device.

Crossland et al. (U.S. Pat. No. 4,528,562) disclose a co-ordinate addressing of smectic display cells.

Stein et al. (U.S. Pat. No. 4,571,585) disclose a matrix addressing of cholesteric liquid crystal display.

Wu et al. (U.S. Pat. No. 5,625,477) disclose a zero field multistable cholesteric LCD.

Hatano (U.S. Pat. No. 6,549,185) discloses a display apparatus and method for driving a LCD.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fritz Alphonse whose telephone number is (703)-308-8534. The examiner can normally be reached on M-F, 8:30-6:00, Alt. Mondays off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven J Saras can be reached on (703)-305-3900.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

**Or faxed to:**

**(703) 872-9314 (for Technology Center 2600 only)**

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)-306-0377.



Fritz Alphonse

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April 4, 2004



STEVEN SARAS  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600